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REMARKS

SEP 27 2006

This Response is in reply to the Final Office Action dated July 17, 2006. It is noted that this Response does not raise any new issues, and is intended to clarify the teaching of Heil et al. (US 5,874,051).

More specifically, Applicants claim a device for removing CO from a gas stream that provides improved selectivity in removal of CO (i.e., less undesirable side reaction), and a simpler structure than prior art devices. The device includes a gas blending unit within a selective oxidative catalyst bed (SOCB) contained in a gas passing tube. The gas blending unit projects inward from the inner surface of the gas passing tube that contains the SOCB so as to partially obstruct gas flow within the SOCB (see lines 16 and 17, and lines 7 and 8 of Applicant's claim 1).

The temperature of a portion of the bed adjacent the walls of the gas blending unit (peripheral part) containing the SOCB tends to be relatively low while the bed toward the middle of the gas blending unit (central part) tends to be relatively high. Applicants discovered that by cooling a portion of the SOCB upstream of the gas blending unit so that the central part of the bed is in a desired temperature range, then blending gas from the peripheral part and central part of the bed before passing the gas into a downstream portion of the SOCB that is not cooled, a high selectivity of CO removal is achieved. The claimed structure provides a simple means to regulate the temperature of the bed and gas from an upstream to a downstream part of the SOCB and to avoid the undesirable side reactions. See for example, Applicants' Figure 2.

In the subject Action, claim 1 is rejected under 35 U.S.C. §103(a) as being unpatentable over Trocciola et al. (US 5,330,727) in view of Heil et al. (US 5874,051). Applicants traverse the rejection.

Trocciola et al. (US 5,330,727) disclose an apparatus for removing CO gas from a gaseous media that includes a reactor composed of first and second stages 20 and 30 (gas passing tubes) connected to each other, and a heat exchanger 40 interposed between the stages 20 and 30 to cool reformed gas. Each stage contains a catalyst bed. The CO remover according to Trocciola et al. achieves a uniform temperature throughout the catalyst bed and suppression of excessive heat at the lower stream part of the CO remover.

Trocciola et al. do not disclose a gas blending unit formed from an element projecting inward from the inner surface of the gas passing tube, and do not disclose that the gas blending unit is within the SOCB as recited in Applicants' claim 1.

Referring to figure 1, Heil et al. (US 5,847,051) is cited for teaching "... a gas blending unit/static mixing structures (8) within the selective oxidation beds ..." (as stated at page 3 of the Office Action). Applicants respectfully assert that figure 1 of Heil et al. does not support this conclusion. The accompanying description of figure 1 also does not support this conclusion.

Heil et al. disclose and illustrate in figure 1 a CO oxidation reactor 1 comprising multiple stages. Each stage comprises a cooling chamber 6 within which there is a static mixing structure 8 and a catalyst bed 5. The static mixing structure 8 is upstream of the catalyst bed 5. Heil et al. expressly state "there is no catalyst in the vicinity of these static mixing structures..." (column 4, line 2). The static mixing structure blends an oxidizing gas with a gas stream for treatment and produces turbulent gas flow that provides passive cooling before the mixed gas stream reaches the catalyst bed (column 2, lines 17 - 21). In other words, the gas blending unit disclosed by Heil et al. is within the cooling chamber, but is not within the selective oxidation beds as recited in Applicants' claim 1.

Applicants respectfully submit that the combination of Trocciola et al. with Heil et al. fails to disclose and/or teach all of the limitations of the claimed invention. Further, as Heil et al. teach away from a gas blending unit within the SOCB, it would not have been obvious to one of ordinary skill in the art to combine these references to arrive at the Applicants' claimed invention.

In view of the foregoing, Applicants submit that claim 1 is allowable over Trocciola et al. in view of Heil et al. As claim 1 is the only independent claim before the Examiner, the claims depending from claim 1 are likewise allowable.

In view of the above remarks, Applicants respectfully request a Notice of Allowance. If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the below-listed telephone number.

Respectfully submitted,

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27 September 2006
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